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December 1953 VOL. XII No. 12

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R. M. SHARP DENTAL LABORATORY
203½ South Fourth Avenue
ANN ARBOR, MICHIGAN
Phone 2-1[illegible]

We wish you peace and good fortune!

Dear Doctor,

A long, long time ago the Druids originated a custom that has lived through the ages.

At Christmas they would hang a spray of mistletoe over their friendly open door. They believed this would bring peace and good fortune to their family all through the coming year.

We, today, still hang mistletoe at Christmas time. It is a symbol of our wish for good health and happiness.

We sincerely hope you will hang a spray of mistletoe on your front door and that it brings you the merriest Christmas and a prosperous New Year.

Sincerely,

R. M. Sharp Dental Laboratory

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A MAGAZINE FOR DENTISTS, DENTAL ASSISTANTS, AND DENTAL HYGIENISTS

ished monthly by TICONIUM
N. Pearl St., Albany 1, N. Y.
Copyright, 1953, Ticonium
Annual Subscription, $2.50

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ions expressed by contributors to magazine do not necessarily reflect the views of the publishers.

Printed in U. S. A. by
C. P. Hoagland Co., Inc.
Somerville, New Jersey

Cover Artist, Vincent Pacelli

Management of the Tuberculous Dental Patient

by Cyril B. Kanterman, D.D.S.

While the control and management of tuberculosis is primarily in the province of the physician, the dentist plays no small part in the rehabilitation of the tuberculous patient. It is now recognized that one of the important aspects of therapy in the treatment of this disease consists in eliminating all oral infectious conditions as well as placing the dental apparatus in the most efficient functional state. The dentist is called upon, perhaps more so than in the past, to render dental service to the tuberculous patient, not only in hospitals and outpatient clinics, but in private practice as well. In a sense, then, tuberculosis may be regarded as a medico-dental problem.

Preventing Infection

Of practical concern to the dentist is the problem of what he can do to protect himself as well as his other patients from contracting the disease during the course of treatment of the tuberculous patient. Tuberculosis is a very infectious disease; and like syphilis, it may well be regarded an occupational hazard of the dentist. Yet by observing a few relatively simple precautions, the dentist can minimize the danger of acquiring this disease or of inadvertently passing it on to his other patients.

The following rules do not represent a radical departure from normal office routine. Rather, they are a few precautionary measures that help maintain the greater degree of asepsis that is necessary when treating the tuberculous patient in the dental office.

1. The dentist should wear a full length operating gown, mask and gloves. The mask is especially important, since it will prevent the aspiration of air-borne microorganisms. After the dental appointment, these articles should be autoclaved before being used again.
2. The patient should be draped so that the chest and shoulders are covered. The drape, likewise, should be autoclaved after the appointment.
3. That all instruments be sterilized following dental procedures is a truism, but with instruments that were used in treating a tuberculous patient, the dentist should pay

particular attention to the method of sterilization. Since the thermal death point of *Mycobacterium tuberculosis* is about 75° centigrade (ten minutes), the most effective method of killing this microorganism is by heat. Many of the cold sterilization agents now in use have a distinct limitation in that they are ineffective against *Mycobacterium tuberculosis*. Thus, the dentist who uses this type of sterilization routinely in his practice should ascertain whether the agent he employs is effective against the tubercle bacillus. If there is any doubt, autoclaving should be the method of choice.

4. The patient should be provided with a disposable sputum-collecting cup which is kept covered at all times and which is burned immediately after the appointment. All other disposable items, such as bracket table covers, paper towels, and drinking cups used during the appointment, should likewise be burned.
5. The patient should be cautioned against coughing directly into the face of the operator. He should at all times shield his cough.
6. The patient with an arrested tuberculous infection should be regarded as an active case and handled accordingly in the dental office.

The Dentist and Self-Protection

In addition, there are several measures which the dentist can take with respect to himself:

1. By allowing himself adequate rest and following a diet which includes all of the requirements for good nutrition, the dentist will maintain his own natural resistance to the disease at its highest level.
2. As a specific measure to increase the resistance of the body to tuberculosis, the inoculation of a vaccine, *Bacillus Calmette-Guerin* (B.C.G.), has been suggested. The inoculation of this attenuated strain of the tubercle bacillus in individuals who may be exposed to tuberculosis, such as physicians, dentists, and nurses, is believed to augment the natural resistance of the body to the disease. Although the value of this vaccine is still in question, the results to date of large-scale clinical studies now in progress appear to be promising.
3. The dentist should receive a periodic radiographic chest examination at regular intervals, certainly at least every twelve months.

The dentist need not have any fear in accepting tuberculous individuals as patients, provided he is willing to take the little extra effort to maintain a strict asepsis.

Since the danger of contracting the disease lies not in treating known tuberculous individuals but rather those who have no history of the disease, the importance of a complete medical history cannot be over-emphasized.

Christmas Dinner

The Buying Spree I see has not
Been outlawed or outmoded.
Lest hospitality be forgot
Our festive board is loaded!

The eggnog's such that we can brag;
The fruit cake's right! We know it!
Proof of the pudding's in the rag
(The bill will also show it!)

Oh, my family's epicurean cries
Of glee may not exhaust me,
But to set this joy-light in their eyes,
I know full well has cost me!

So covered up in ties and hose,
Surrounded by the holly,
I breathe my fervent thanks to those
Who've made my season jolly:

To patients and their teeth—and how
I've strengthened and restored them,
For they can chew on goodies now,
And I—I can afford them!

Helen Harrington

Dentistry in the Press:

Ten-Year Project In Dental Disease Control

Text and photos by Authenticated News

An experiment in dental disease control designed as a ten-year project, has resulted in a striking improvement in dental health among children after only three years. The small farming village of Askov, Minn., in the east central portion of the state, is the site of the community dental health program sponsored by the Minnesota State Dental Association, the Minnesota Department of Health, the U. S. Childrens' Bureau, and Askov.

Before the program started, the community contained no dentist and had an unusually high rate of dental disease attributed in part to a diet rich in pastries. The village is made up of persons of Danish descent and is known as the "rutabaga capitol of the world."

The program has resulted in reductions in tooth decay ranging from 41.6 per cent in the 3-to-5 age group to 8.4 per cent in the 13-17 age group, as compared with children in a nearby community of Hinckey, Minn., chosen as a "control." The program, covering 350 children, includes intensive instruction in toothbrushing and diet, complete dental examinations, dental corrections, and applications of sodium fluoride.

Apples and milk supplant candy and soda pop on the Askov diet table.

A toothbrush drill at the Askov Elementary School.

Inspecting the teeth of a young Askovian.

School children line up to get their tooth powder from a dental assistant.

Doctor John Peterson explaining a student's X-ray to the girl and her mother.

Being prepared for an application of sodium fluoride.

Are You Really Insured Against Damage Suits?

by Harold J. Ashe

Dentists very well might take time out to examine insurance policies to ascertain whether they are protected against the possibility of bodily injury damage suits. And if so, whether the insurance is sufficient to meet any possible award.

One of the little noted consequences of inflation is the sharp rise in the amount of awards for personal injuries. There is a continuing liberality upon the part of juries to award damages which, only a few years ago, would have been considered fantastic. Some observers believe this is because jurors feel that damages come from an impersonal insurance corporation, rather than from an individual. Where insurance is carried, this is true, although in the final analysis even insurance companies must look to premiums of policyholders to meet claims. This explains, in part, the rise in premium rates.

In any event, if a plaintiff is not insured, it is by no means certain that a jury will be any less liberal in the amount of the award against him.

Due in part to the growing complexities of our civilization, the incidence of accidents from which damage suits can arise is increasing. The public is becoming more damage-suit conscious. The result is that often those who sustain only slight and superficial injuries rush to court.

Too, the time is past when life and limb is considered cheap and when the totally disabled can be thrown onto the human scrap heap for a petty cash settlement. Damage suit abuses aside, most thoughtful people consider it a gain that these days are past.

But, as a result, this changed public and judicial attitude toward personal injuries is fraught with grave peril for dentists who are not insurance-conscious. They should alert themselves to the fact that large awards are now commonplace.

Where a few years ago $1,000 might be awarded for a particular injury, the same kind of injury now may represent a $5,000 claim. There is absolutely no assurance whatsoever that an award will bear any relationship to any other award for a like injury. Almost literally, the sky is now the limit in such damage actions. Even doubling nominal insurance policies because of inflation will not be enough.

As was observed in a court case many years ago: "Two things are unpredictable. One is the weather, and the other is the verdict of a jury."

To be really insured against the financial consequences of a damage suit for personal injuries, a dentist needs to consider two and perhaps three kinds of insurance protection.

General Liability Insurance

The first is general liability insurance. This covers the legal liability of a dentist to others for accidents in his office. No matter how careful he is in his office there is the ever present possibility of an injury being sustained by a patient or other "invitee."

A study of damage suits for bodily injury sustained on business premises demonstrates that accidents can and do occur in the most unlikely manner, and from seemingly the most remote hazards. The human element is always present in such accidents and cannot be discounted in speculating about the possibility of an accident occuring. What would not be an accident hazard to one person may present a very real danger to another. It then becomes a matter of a plaintiff's attorney to demonstrate negligence upon the part of a dentist.

While trying to anticipate accident hazards and remedy them, a wise dentist will not fail to give himself the additional protection found only in a general liability insurance policy. Preventive measures failing, he has assurance he can meet any likely damage award and, at the same time, discharge his moral responsibilities to others. The amount of insurance carried should be in line with the realities of present-day damage awards.

A policy for $10,000 is likely to be inadequate. A $25,000 policy will provide a wider margin of safety, and $50,000 may not be too much to guard against an excessive award.

One suit, picked at random, was filed recently for $31,500 for permanent injuries claimed to have been sustained as a result of a fall on business premises. Another suit asked for $22,000 for injuries involving a fractured leg. Larger suits and awards are not uncommon.

Automobile Injury and Property Damage

The second kind of insurance protection a dentist needs is to be had in an automobile bodily injury and property damage policy. All cars, even those used infrequently, should be insured.

It is significant that almost one out of four business and professional men are estimated to have no automobile bodily injury and property damage insurance. Of those having such insurance, about 30 per cent have only the so-called five-ten, that is, $5,000 for any one injured person and $10,000 for each accident.

With the size of today's awards, $5,000 or $10,000 is far too little. It means dentists so insured are attempting to insure themselves above those minimum amounts. Yet it is the awards above these figures that can hurt the most. It is well to keep in mind that in losing a damage action, a dentist's entire net worth may be exposed to attachment to satisfy an award. His life savings and investments can be wiped out by a disastrous automobile accident as certainly as a fire can destroy his office. Oddly enough, dentists who are amply protected against fire destroying their office, are with few exceptions either entirely or partially exposed to the danger of attachment via a personal injury award for an excessive amount.

While most of those insured for automobile bodily injury and property damage now carry at least $10,000-$20,000, this is probably too little. More and more policies are now being written for $25,000-$50,000. Even such policies do not give 100 per cent protection.

Premiums for higher insurance protection are relatively low. For instance, in one area the basic rate for a private car, non-business use, is $25 for $5,000-$10,000. The excess coverage to $25,000-$50,000 is $13.50, or 50 per cent more for five times as much coverage. This lower rate for excess coverage is due to the fact that awards are fewer in the higher brackets. But the possibility of such a high award should not be discounted in buying a policy.

Indicative of the size of suits growing out of automobile accidents is one in which a woman sued for $50,605 for alleged injuries to her back, cuts, and concussion. In another suit, the plaintiff sued for $950,000 for the death of his wife and for personal injuries resulting from a collision. The jury awarded him $10,000 for his wife's death and $35,000 for his injuries. A minor child received $3,500 for an injury to one finger.

Oh, for Less Than One Per Cent

The job of righting
A plate loose-biting
Might be a chore more prized
If the human gum
Had only come
Guaranteed sanforized.

—Margaret Evelyn Singleton

"I'M QUITTING TO GET MARRIED, BUT I WOULDN'T THINK OF GIVING NOTICE UNTIL AFTER CHRISTMAS."

Dentists should not fail to investigate the possible need for a third type of insurance: employers non-ownership liability insurance. If an employee, such as a receptionist, uses her car, even occasionally, to serve her employer, such a policy may be wise. Example: a receptionist who periodically goes to the bank for the dentist in her own car. Even though an employee has insurance it may be in the lower brackets. If so, the dentist may be named in a damage action seeking damages exceeding the amount of the employee's insurance.

As an alternative, a dentist might be well advised to instruct an employee not to use her own car on his business, even for her own convenience. That statistically accidents occur with some relationship to the number of miles driven does not preclude an employee having an accident the one time she uses her car for business purposes—and with a damage suit resulting.

Probably in no insurable respect is a dentist so likely to be exposed to possible heavy loss as in the matter of inadequate coverage against personal injury damage actions.

IMAGINE THIS!

This patient, bless him, recommends
Me unreservedly to friends.
He doesn't ever criticize
My methods or what I advise;
And always when I quote a fee
He pays it promptly, cheerfully.
I often wonder how I'd feel
If I should find that he is real.

—Mildred Mason

ANGLES AND IMPRESSIONS

by Maurice J. Teitelbaum, D.D.S.

Dental Thisa and Data

During the past year, the Bureau of Statistics of the American Dental Association has come up with the following assortment of facts: (1) Caries is the principal cause of tooth loss up until the ages of 39 in women and 34 in men. After those years, periodontal disease is the causative factor. (2) The group of Americans mostly in need of dental restorations are those between 15 and 19 years of age. (3) Some form of orthodontic treatment is necessary in 1 out of every 4 children between the ages of 10 and 14. (4) Periodontal treatment is needed by one out of every ten adults. (5) Of every 12 patients seen, 1 requires no other dental treatment save prophylaxis . . . . From the neurosurgical clinic of the University of Pennsylvania Hospital comes the report that novocaine is the drug of choice to control pain in hopeless cancer victims. The nocovaine is injected into the frontal lobe of the brain . . . . One of the most interesting articles we've seen in the past year dealt with pain. It appeared in *Collier's*. In case you missed it—some research workers at the New York Hospital-Cornell Medical Center devised a means of measuring pain with an instrument called a "dolorimeter." The most severe pains recorded were those of labor pain during childbirth and the pain suffered during the passage of a kidney stone. It might be interesting to note that, according to these tests, "most" toothaches are more painful than "most" cancer pains, "most" backaches, the pains of arthritis, sinus pain, "nearly all" abdominal pain, and "most" neuralgia . . . The latest specimen of human jaws unearthed, that of the prehistoric Sterkfontein Man (found by J. T. Robinson of the anthropological section of the Transvaal museum) had a complete set of dentition.

"Bringing Home the Tree" was painted by Norman Rockwell for Hallmark Christmas cards.

Inci-dentals

The old expression, "paying through the nose," became "paying through the teeth" for Alex Brown of Glasgow, Scotland. Mr. Brown was fined the equivalent of $74 when he hurled his dentures at a music hall attendant who attempted to evict him because of his continual heckling . . . . Another odd bit from abroad is an ad prepared by an advertising agency in Oslo, Norway, for a dentifrice. It's just about the final word in the chlorophyll chant and for our money wins the prize for people "least green with envy in 1953." It simply reads: "The clean white toothpaste without chlorophyll." . . . . One of the latest inventions to hit the gadget market is a pillow for automobile drivers that is hooked up to a battery so that it massages the driver's back. The rate of automobile accidents indicate that what is needed is something to massage a little caution into the driver's head . . . . Although used at the University of Michigan Dental College for the past ten years, the *USI Chemical News* reports on a "new" method of repairing and saving teeth—"whitewashing them with calcium hydroxide." . . . . Did-You-Know? Dept: That December is the 100th anniversary of the birth of Robert Koch? . . . . That very little, if any, of the calcium in spinach and the other calcium-rich leafy vegetables is of any value to the body (The reason is that these foods contain relatively large amounts of oxalic acid, which combines with the calcium to form an insoluble salt that the body is unable to absorb. Smart, ain't we?)

Dental Dilemma

There once was a dentist from Flein,
Whose fame had just spread like a vine.
Patients came from afar
From Berlin to the Saar,
Cause he didn't serve water—but wine.

A Merry Christmas to all!

Dental Wives

Auxiliary Christmas Spirit

by Kay Lipke

Christmas spirit comes in almost as many shapes and styles as the gifts beneath the Yule tree.

To some, Christmas spirit means the opening of hearts and lungs in the singing of anthems in church and cathedral. To others, it is a family gathering around the hearthside. To many, holiday spirit means huge parties in rooms echoing with gayety and conversation, with a well-filled wassail bowl on a candlelit dining table, banked with holly and food.

There is the Christmas spirit shown by the dental auxiliaries. In some districts the dental wives just relax from the year's labor, and have fun entertaining their husbands in a purely social evening. Elsewhere the accent is on philanthropy.

One dental auxiliary gives a Christmas party early in December, with the price of admission a new toy, for the later enjoyment of children in a local orphanage on Christmas morning. Another auxiliary concentrates its efforts on creating a happy Christmas for the inmates of a nearby home for the aged, each member being assigned the name of one of the "forgotten ones" as her special Christmas responsibility.

In the large dental district, which embraces Los Angeles, California, the woman's auxiliary gives a formal dinner party for all the members of the dental society and their wives, the proceeds of which go toward a P. T. A. dental clinic for children and a scholarship fund for deserving dental students at the University of Southern California.

It is holiday spirit with a helpful undertone. After all, the very word "auxiliary" means assistance, support, cooperation. It is on these principles that the dental auxiliaries have been founded.

Peeking into the constitution and by-laws of one woman's dental auxiliary, we find its objects to be: (1) to bring the members into more active affiliation with the dental profession; (2) to initiate or assist in any activity that may be approved by the dental association; (3) to extend the aims of the dental profession to all organizations which seek the advancement of dental health and education; (4) to promote fellowship among the families of dentists; and (5) to promote the welfare of dentistry.

Now these are noble and high-sounding aims for any organization, and they are carried out, for the most part. There is a well-founded rumor that the dentists themselves were not too enthusiastic when they found their wives beginning to organize themselves into auxiliaries; but there is another well-founded rumor—that most of the dental associations are delighted with the cooperation they have received from their auxiliaries. Dentists have found them ready and willing to cooperate on projects for the betterment of dental health in the community. For one thing, the auxiliaries perform a fine service as a sort of liaison between the dental associations and the schools and the P. T. A. They help in the preparation and distribution of dental equipment and supplies for exhibits in schools, and, all in all, have done a good deal to establish friendly public relations between the dentists, the schools, and the community.

The auxiliaries have also helped to establish scholarship and loan funds for deserving dental students in various dental colleges.

As a district auxiliary president expressed it, "We are organized to assist our dental societies in any way we can. If the need should arise for a concerted campaign to fight socialized dentistry, or to promote some program of advantage to dentistry, we are set up to do our small part. It is my dream that some day the various woman's auxiliaries to dental societies throughout the United States will be united in some sort of an organization similar to, and subordinate to, the American Dental Association. At present we have no idea how many woman's auxiliaries there are or where they are located."

In addition to the serious aims of the auxiliaries, there are the happy friendships which have been made since auxiliaries were organized. "We have made friendships of a lifetime," said one auxiliary president enthusiastically. "There is a wonderful feeling of cooperation in our group and, best of all, we are taking an active interest in our husbands' profession. We feel, too, that we are doing our modest bit to help them promote the dental health of the community."

That is the spirit of the dental auxiliary, the spirit that is expressed from Christmas to Christmas!

THE DD IN DDS

They minister to afflicted dentine
And dental confessor is one of their roles;
They preach the gospel of oral hygiene—
But have trouble saving their "soles"!

—Barbara Becker

MERR

LOOKING A CLOTHES HORSE IN THE MOUTH

Like me, you must have often seen
The credit lines on TV screen.
Her gowns by a couturier
And that includes her negligee.
A snooty salon dressed her hair
And even make-up gets its share,
For then the cosmetologist
Gets his or her name on the list.
A brooch worn once, but you can bet it
Gives the jeweler his credit.

Now I contend, and always will,
That all this glamour would be nil
Without the lady's frequent session
With modern tools of our profession.
Yet pandemonium there'd be
'Mid star, producer, agency
If one of us a hint just ventures
That we get credit for her dentures!

Irene Sekula

"Just let me rest a while—my feet are killing me from Christmas shopping."

"These toothpaste samples give it a nice wintry effect."

GLORY BE!

A dentist's waiting room will vie,
  With a beauty parlor;
In where to pick up bits of news, like
  Whose boy friend is taller.

And who was operated on last month,
  Or, what a darling dress.
And, though you'll find steaks are "divine,"
  You can't depend on Tess.

"I hear the Browns can't keep a maid,"
  And "winters seem much colder."
And then you know they're bound to shriek:
  "She looks ten years older."

These walls have grown accustomed to
  This flow of idle chatter.
The dentist, in his cubby-hole,
  Is on another strata!

Ethel Willis Hewitt

RROODS

Acci-Dental Appointment

by Sue Taylor Coons

Last minute shopping on Christmas Eve was no excuse for being late. I knew better than to keep a dentist on his feet waiting after five o'clock and naturally I felt a bit apprehensive when I pulled up in front of the office building expecting to see my husband leaning wearily against the entrance doorway. Fortunately, he hadn't come down. I sighed with considerable relief, turned off the motor, and sat watching the pedestrians hurrying home with their parcels.

Three cigarettes later, prompted by visions of blackened turkey, I thought I'd better go up and see what detained His Royal Highness.

I found him sitting on his neck in his swivel chair, his long legs (with the varicose veins) propped on his desk, and anger sticking out four feet in his eyes.

"Are you going to spend the night up here?" I asked (smiling of course).

"What a day!" he said bitterly. "And what do you suppose happened at exactly five minutes to five?"

I looked about to see where the bomb had exploded. "Well?" I said. "What did happen at exactly five minutes to five?"

"Just as I was putting on my coat, a physician, good friend, you know, called and said he was sending a patient over to get her teeth X-rayed. I'm still waiting."

I have never known him to answer the phone at home. I always do it, and may the Lord forgive me for all my little white lies. "No," I always say, "he's gone to the farm. Would you care to leave your number?"

"That poor woman," his patients probably say. "He's never at home even at three A.M.!" And heaven knows what they think he does at the farm at that hour.

I ran sympathetic fingers through his thinning hair. "Can't you see this patient after Christmas?"

"She's from Scottsboro—driving back tonight. Go on home. I'll walk."

"I can wait or come back," I suggested.

"I said go home!"

"Okay, Harry," I said. "But don't forget about the country club dance tonight—and you promised to help me put up our tree—and it has to be trimmed—and we haven't wrapped all the presents—"

"My God!" he roared. "You don't expect me to go dancing tonight!"

It occurred to me somewhat forcefully that a dentist could be a pretty formidable guy, but as I have long since learned by the trial and error method that appeasement is the best policy of the dental wife, I left obediently. Who said the noble profession makes dentists more patient with their wives? I disagree heartily. My husband is really a prince of a fellow but long hours of the steady grind are not conducive to a good disposition and after smiling all day and keeping the ball of conversation going, who can expect a man to continue the practice at home?

At the time, however, I was incapable of this sensible line of reasoning and, with very little effort, succeeded in working myself into a fine private lather.

Several hours later, after I'd salvaged the morrow's turkey, wept over the ruined dinner, and stuck holly sprigs on all the pictures, I tugged the big tree in from the porch, and, fortified by sheer determination and a few unprintable words, set it up in the living room. As I sat nursing resentment and my cedar wounds, I heard a car stop outside. Hurriedly opening the door, I recognized my husband's familiar figure with the slight professional stoop coming up the walk. I also recognized the man with him and gasped involuntarily. Why was he bringing home Doctor Carson (the chiropodist who had an office on the same floor) at this hour? I wondered.

My eyes searched Harry's face for the answer, but what I read there was high humor, although not the kind produced by good bourbon. I couldn't imagine what had caused this remarkable change, but whatever it was I welcomed it and him—and the long box he carried with open arms. I beamed

(*Continued on page* 16)

Part VII

The Removable Partial Denture

TYPE AND CHOICE OF ABUTMENT

by Joseph Murray, D.D.S.

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Complete agreement exists among noted clinicians and teachers that abutment preparation, although vital to the success of a restoration, is of secondary importance to total mouth planning.

Doctor V. L. Steffel firmly believes that the step in clasp partial denture procedures most often neglected or omitted altogether is the "preparation of the mouth, or alterations, before making final impressions."

Doctor C. H. Schuyler, too, warns that the remaining natural teeth are often accepted as they are found, without considering unfavorable bell contours or inclinations which cause clasping difficulties.

He points out that common sites for such teeth are the lingual surfaces of the lower bicuspids and molars, the buccal surfaces of the upper bicuspids and molars, and the proximal surfaces of the cuspids. In such cases corrective grinding is helpful.

The elimination of the proximal convexity or the reduction of proximal surfaces of anterior teeth, where the space has been lessened by tooth migration, may also aid in assuring esthetic values, says Doctor Schuyler.

And Doctor E. B. Nuttall emphasizes that slight adjustments of the cusps by selective grinding may be all that is necessary to eliminate excessive force on individual teeth. He adds that rotated teeth may be corrected with full crown restorations; however, many such members, including tipped or slightly drifted teeth, may require orthodontic treatment—often a necessary adjunct to any rehabilitation program.

The advice that Doctor J. R. Gill offers is that from study casts mounted on the articulator, the various types of restorations indicated are determined. A formative plan for balancing the occlusal relations must be kept in mind for the various preparations.

He maintains that cuspal relation in function, paths of the mandible, the direction of the forces which are applied to the teeth individually and collectively, and the position of the facets that have been formed, must be visualized.

Also, the erosion, attrition effect of caries and tooth position must be evaluated. By mounting the casts on a surveyor, the marginal outline, resistance, and retention form of the preparation can be scribed on each tooth, which must function individually and as part of a collective unit.

Doctors Kabnick and Levy

Doctors H. H. Kabnick and M. A. Levy hold that, in addition to factors of mouth hygiene, occlusion, bone support, esthetics, and mechanics, consideration should be given to the importance of span length, abutment root shape, gingival tissue condition, tooth position, masticatory musculature, and disease susceptibility.

Extruded teeth should be reduced for esthetics, to free inhibited jaw movements and to restore a correct occlusal plane. These procedures should not be delayed until the restorations are made, for the grinding might thin out, perforate or destroy the appliance.

At times, these clinicians advocate repositioning of the mandible—the approach being either direct or indirect. Usually, the following procedures are necessary:

Shortening certain teeth to correct extrusion, and remodelling occlusal surfaces to remove deep intercuspation.

Rebuilding posterior teeth to a new occlusal plane with gold castings or jacket crowns. Fixed bridges, splints or a combination may be indicated.

Partial or full dentures may be necessary.

Anterior teeth may require bridges, splints or jacket crowns creating definite vertical contacts.

Of the two methods of approach to this problem—direct and indirect—the former is the authors' choice. A plan is prepared in the form of a list showing the order in which the teeth are to be treated. The subsequent restorations may or may not be worn as the work progresses, but a major portion must be completed before the case can be assembled in the mouth—to obviate insufficient occlusal balance and straining of isolated teeth.

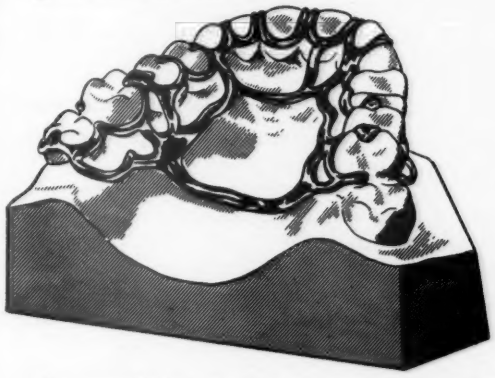
The indirect approach requires the use of temporary devices like splints, bite-plates or occlusal platforms, made of gold, chrome-cobalt alloys, plastics, vulcanite or combinations of these materials, to guide the jaw to its corrected position and maintain it until permanent reconstruction is begun.

On occasion, when the clinical crowns are too large for the length and shape of their roots or the underlying bone support is inadequate, it is advisable to remodel the teeth by grinding. Should the dentine be exposed under such procedures, then gold castings must be made to protect such teeth from possible decay.

Doctors Kabnick and Levy advise that the entire occlusal surface or the incisal edge be covered where a gold restoration is to be used as a bridge abutment.

They point out that the full cast, the three-quarter and the pit-veneer crowns are the most successful of all bridge attachments. Their use is indicated as follows:

As individual tooth restorations where the teeth are badly broken down and cannot be restored by a simple or a silver alloy filling.
To restore contact with the adjacent tooth.
For soldered union with a similar casting or an adjacent tooth (splinting).
For restoring a tooth to its correct occlusal position, e.g., depressed teeth or those out of alignment.
As bridge abutments where complete fixation is required.
As prosthetic abutment castings to receive precision attachments.



As prosthetic abutments to prevent decay under clasps.
As prosthetic abutment castings in which lingual rests for anterior teeth are established.
Where there is need for increasing the coronal length of teeth, as in the case of so-called bite-raising.

Abutment Planning

In the consideration of abutment planning, the full cast crown, with an acrylic veneer where necessary, plays a major role. As a matter of fact, Doctor L. W. Thom is of the belief that it is the strongest abutment known at present and, with certain modifications, can be used on any tooth in the mouth.

Other well-known advocates of the cast and acrylic-faced crown as retainers are Doctors L. A. Cohn, Alexander Leff, and L. H. Clayman.

Doctor Clayman suggests, as does Doctor Leff also, that for maximal efficiency, diamond instruments should be used at high speed with light pressure and lubricated by a continuous stream of tepid water. This combination is reputed to be three to five times as efficient as slow speed and high pressure. In addition, Doctor Clayman reduces his operating time by using a minimum number of instruments.

In cast crown preparations, previous fillings are removed, unless they are recent ones placed by the operator, who is certain they are caries-free; and preparations are carried carefully below the gingival border.

The Cast Gold Crown

Doctor Daniel Isaacson is yet another clinician who espouses the cause of the cast gold crown as a retainer for the clasp partial denture. His preparation differs from the orthodox in that there is a deeper cut on the occlusal aspect to allow sufficient room for the rest.

Since a gold casting will be used as an abutment, a full shoulder is not necessary. For esthetic reasons, the preparation should have a labial or a buccal shoulder in those teeth that will require an acrylic window. Lower teeth may be shoulderless.

The preparation is carried gingivally to areas more caries-resistant, because rampant decay is one of the reasons for this type of restoration.

Doctor Isaacson cautions ending the preparation at the base of the gingival sulcus to prevent unnecessary recession of the gingiva.

This type of attachment can also be used to correct any malpositions by altering the preparation to the individual requirement. Moreover, it is an excellent abutment where a fixed bridge is not indicated and where the patient cannot afford the cost of a precision retainer. Especially is its use indicated where mouth conditions are unfavorable and where a conventional partial denture would only result in failure.

Departing from the regular method which utilizes clasp design to achieve proper clasping, his technique achieves correct clasping by proper crown design, the latter conforming to the mental image of the finished clasp.

The survey line on the wax crown is now drawn; then the crown is trimmed to create undercut and non-undercut areas.

Doctor Isaacson feels that the design of the crown will be affected by the following features:

Esthetics: The crown may be so designed that the clasp hugs the gingival of the tooth.
Periodontal health of the tooth: The buccal and lingual arms of the clasp should exert equal pressure. The cervical third of the crown should be properly carved for food deflection from the gingival tissue.

Position of the tooth: A badly tilted tooth may limit the clasp design.

Retention of the partial denture: The basic concepts of clasp design are fully utilized. The crown should be contoured so that the undercut areas are adapted to the retentive part of the clasp and the non-undercut areas conform to the body or bracing parts.

Additional retentions: By placing a slight bulge above the distal or retentive section of the clasp, that arm will be held snugly.

Doctor Isaacson suggests that the occlusal recess be designed so that the rest will blend into the occlusal contour of the tooth; that the shape of the recess be a modified box form; that the corners be rounded and the recess tapered to permit ease in casting the rest; that the recess be elevated on the distal section to prevent slipping of the clasp in that direction; and that in a mouth with missing teeth in one quadrant only, the occlusal recess can be designed to permit crossing over of the clasp arm to avoid occlusal interference.

Since the final shade is dependent on the background color of the gold, thickness of acrylic used, masking substance, and type of commercial acrylic used, Doctor Isaacson constructs his own shade guide, using plastic teeth into which windows are cut. These are cast in gold, plated to the desired background, masked as for the final product, and cured with the acrylic of choice.

He lists the following advantages in using gold crowns as retainers for partial dentures:

The incidence of caries around abutment teeth is minimized.

Weak teeth may be splinted.

By carving the wax crowns on a surveyor, the abutment teeth can be designed to suit the partial denture.

Esthetics can be improved by keeping clasp arms out of sight or close to the gingival tissue.

Greater stability and retention can be achieved from such a planned partial.

Adjustment of the occlusion and recarving of individual teeth to blend better with the rest of the mouth is made possible.

The "Stabilizing Square Seat Attachment"

"The most serious objections to the clasp type of denture are the poor esthetic effect and the tendency to cause caries of the abutment teeth," says Doctor S. G. Standard.

Consequently, he has been using for many years, a "stabilizing square seat attachment" to overcome these disadvantages and to utilize the favorable factors of internal attachments.

This consists of a cast or three-quarter crown into which is cut a deep lug seat or slot extending the full length of the crown on the mesial or distal surface, as conditions require, and a lingual Roach-type clasp set into a horizontal groove on the opposite side of the crown.

The lug seat or slot has squared parallel walls. It is not keyed in, thus permitting the male member to move in a horizontal as well as vertical direction. This provides a positive seat for the male portion attached to the denture to rest in and transmit the force of mastication to the supporting teeth in the direction of the long axis of the tooth.

The fact that the male portion of this type of retainer is permitted to move horizontally, obviates strain on the supporting teeth in dentures borne by tooth and tissue.

Under certain conditions it is not always possible to have the end of the lingual arm in direct opposition to the slot, causing the abutment tooth to move away from the lug. In such cases an additional seat on the opposite side of the casting is prepared.

Doctor Standard claims the following advantages for the "stabilizing square seat attachment":

Abutment teeth are protected against decay.

Labial clasp arms are eliminated for better esthetics.

Horizontal strains are minimized because the attachments, when properly seated, exert no pressure against the tooth.

It provides its own stress-breaking in dentures borne by tooth and tissue.

It is comparatively simple to construct and less costly than a precision attachment.

The Hinge-Lock Abutment Attachment

The answer to the demand for an esthetic restoration with no anterior visible metal as a replacement for lost maxillary bicuspids and molars, comes from Doctor J. H. Greene—the hinge-lock abutment attachment.

This is especially adapted to cases in which esthetics must be considered, economy of chair time is desirable or a semi-precise invisible anterior abutment attachment is a necessity.

The originator of this retainer advises that it is not indicated for bridges of more than two abutments. Moreover, the hinge method of insertion precludes any extension of the bridge anterior to the anterior abutment; and, because of the method of insertion, is not adaptable for a one-tooth replacement.

Doctor Greene is of the belief that this retainer is strong enough to support from two to four pontics or as much stress as the abutment teeth themselves can withstand.

He points out that the bridge may be constructed by the direct, indirect or indirect-direct method. Only the anterior abutment attachment requires a deviation from regular procedures. The posterior part of the retainer is a cast clasp of the usual type with the proper points of retention indicated by the survey.

The hinge-lock device is composed of two members: a female part consisting of a three-quarter crown or a hard gold conventional inlay, containing hinge seat, groove and lock, and a male counterpart fitting a cutout in the inlay.

For a direct inlay, two pins for mesial retention are indicated; for an indirect retainer, a deep mesial groove is cut into the dentine.

For the preparation of a bicuspid, the hinge seat is cut on the occlusal surface of the casting with a round bur No. 4 to the depth of half the diameter of the bur, and a half-round channel parallel with the distal surface of the inlay is formed.

Next, a groove, V-shaped both gingivoocclusally and from the hinge seat mesiodistally, is prepared to unite the hinge seat with the lock on the distogingival third of the inlay.

Whereas the hinge is a half-round preparation, the lock is of oval outline with a flat floor, the walls coinciding with the arc of a circle described with the same center as the hinge seat.

Doctor Greene produces the male member of the hinge-lock by making an impression of the cutout in the inlay, being careful to force the wax closely against the floor and walls. Now with a stiff explorer the wax is engaged at the junction of the groove and the lock.

With the occlusal hinge as the center of rotation, the explorer is swung outward and occlusally, and in and out several times to be sure there are no undercuts to distort the wax.

The distal surface is covered over with a sheet of wax which is extended beyond the margin of the groove as an overlap. A sprue is attached at an angle gingivally so that it can be trimmed to the alveolar ridge.

For cuspid teeth, the hinge, instead of being parallel with the distal surface, must be a ball and socket arrangement because of the inclination of the lingual surface of the tooth.

Reasons for Failure

At this time it might be appropriate to review some of the common failures in fixed bridge prosthodontics. According to Doctor R. L. Simpson, they are loose retainers, fractures of soldered joints, fractures of porcelain or acrylic resin, fractures of the abutment teeth or holes in retainer or pontic. These failures may result in recurrent caries or loss of abutment teeth.

He points out that a loose retainer may be caused by incorrect design, inadequate retention, inaccuracy in the fit of the bridge or an incorrect mounting technique.

Fractures of the abutment teeth may stem from an incorrect design of the retainer, from inadequate bulk of metal, from use of metals of inferior physical properties or from weak abutment preparation.

Holes in the retainer or pontic may be due to inadequate bulk of metal, to excessive abrasion or to a porous spot caused by shrinkage.

Recurrent decay may result from a poor attachment, neglect or poor oral hygiene on the part of the patient, abnormal susceptibility to caries or from inadequate embrasures and interproximal areas.

Loss of abutment teeth may be caused by apical or by extreme periodontal involvement.

Although Doctor Simpson emphasizes the loose retainer as being a common type of fixed bridge failure, we cannot lose sight of its importance as a detrimental factor in conventional removable and precision bridgework, too.

One of the cardinal principles in the preparation of an abutment tooth is retention of the finished retainer, admonishes Doctor Simpson. And perhaps the most important factor in the loss of retention is the careless and injudicious removal of tooth structure which results in a preparation that has too great incisogingival or occlusogingival convergence. Since the abutment teeth move under the stress of mastication, any preparation presenting definite occlusal or incisal convergence will predispose the finished bridge to failure.

Doctor Simpson further advises that in the construction of a partial veneer (three-quarter) crown, the proximal grooves offer the only resistance to lingual displacement of the retainer, or, in some instances, rather a labial dislodgement of the abutment tooth. Hence the importance of the location, position, length and depth, and convergence of these grooves.

On an anterior tooth he advocates placing the labiolingual grooves at the junction of the labial and middle third of the tooth, parallel to the incisal two-thirds of the labial surface; and that there should be only slight incisal convergence of the axial walls of the preparation.

It is imperative that not too much tooth structure be removed lingual to the deepest part of the groove, lest the finished retainer be displaced lingually or the abutment tooth be rotated labially.

In addition to the abutment preparation, the selection and design of the retainer has a direct bearing on the success of the finished restoration.

Classification of Retainers

Doctor Simpson classifies retainers in the order of greatest retention, as follows:

Posterior retainers:

Complete veneer crowns (cast banded crowns; full veneer cast crown; cast occlusal and contoured band).
Dowel crowns.
Partial veneer crowns of various types.
Inlays of three or more surfaces.
Inlays of two surfaces.

(*Continued on page* 16)

The Oddoguard

FOR LIVING

DR. VINCENT J. ODDO, JR.—Inventor

by Joseph George Strack

Part I

Doctor Oddo

Every dentist desires to make a substantial contribution to preventive dentistry. Most persons, at one time or other in their lives, think of developing some useful and, hopefully, profitable invention. Many people like to maintain a deep and rewarding interest in a profession or field other than their own specialty, as a hobby or secondary pursuit. Doctor Vincent J. Oddo, Jr., of Providence, Rhode Island, has realized all of these goals. He is the inventor of the Oddoguard, the successful mouthpiece endorsed by the National Boxing Association and used, not only in boxing, but in football, basketball, and hockey as well. One of the famous athletes who use a custom-made Oddoguard is Rocky Marciano, the world heavyweight champion boxer. Another is George Araujo, lightweight title contender.

Doctor Oddo's unique accomplishment probably could have been achieved by any dentist who had given the interest, thought, and effort that this Rhode Island dentist did to one of the most common problems in sports—head injuries; at least, so Doctor Oddo maintains. While a captain in the United States Air Force, he was base oral surgeon at Bolling Field, Washington, D. C. Members of the football teams at the base, like all other football players, suffered lost, broken, and chipped teeth, cut lips, lacerated cheeks, and brain concussions. Doctor Oddo saw hundreds of these injuries at the base dental clinic and treated many of them. He soon became interested, not only in how to prevent oral damage, but how to avoid the more serious head injuries, which constitute the leading cause of death in sports.

Fatalities

"Boxing was the easiest sport to study in connection with head injuries, because the single major objective of boxing is to hit the other fellow on the chin," he explains. "At the moment of impact, whether the mandible is in the open-bite or closed position, the force of the blow usually sends the mandible laterally, posteriorly, and superiorly. The condyle is snapped back to this abnormal position, and it strikes the surrounding anatomical structures. In addition to the traumatizing of the local surrounding structures, this traumatic force, can, we know, be transmitted through the thin bone of the mandibular fossa and affect the portion of brain cells in the immediate vicinity of the mandibular fossa at the base of the skull. This type of injury results in death in almost all cases."

Doctor Oddo recognized that if these serious head injuries were to be prevented, the force of the blow on the chin had to be stopped from being transferred from the chin to the base of the skull, where the permanent damage is done. To accomplish this he would have to design a device that would preclude that transference of force, yet would permit the athlete who used the device all the necessary freedom of oral and respiratory movements.

After several attempts, he developed a mouthpiece of rubber composition—the Oddoguard—that achieved the major goal of prevention and also incorporated several advantages not found in other mouthpieces.

The Oddoguard, unlike some other mouthpieces, fits over both the upper jaw and the lower jaw, thus tending to cushion, with maximum effect, a blow on the jaw; make it much more difficult to knock out a boxer who wears the device; and prevent cuts of the inside of the cheeks and lips. Some mouthpieces stop the wearer from talking and from breathing through his mouth, but the Oddoguard permits even a quarterback to call his signals through it. By allowing the user to breathe through his mouth, the Oddoguard helps to reduce fatigue and discomfort. One of its greatest benefits, from the viewpoint of dentistry, is that its double rubber shock area between the upper and lower jaws minimizes traumatic injury to the teeth caused by blows in competitive sports. Its double layer of rubber—one on the upper, one on the lower piece—affords double protection against injuries to the base of the skull. Other unique features of the device are: a hinge action, which causes it to open and close with the mouth; curved construction, which "hugs the teeth," thus preventing gagging, and the slipping and falling out of the mouthpiece; and pure latex rubber construction, which insures a natural and comfortable fit for almost every size and shape of mouth and teeth.

Today more than 15,000 Oddoguards are in use in the Nation's schools, colleges, and universities.

The significance of the growing use of the mouthpiece can be seen by examining the following data offered by Doctor Oddo:

The Topeka (Kansas) Board of Health released statistics which indicated that 97.8 per cent of dental injuries in a recent year were due to football and basketball. Of $7,532 paid to physicians and dentists for the treatment of injuries, $5,992 was paid for injuries sustained in playing football and $1,059 for injuries received in playing basketball. Football and basketball accidents accounted for approximately 93 per cent of all monies spent for treatment of injuries. Football is responsible for four times as many accidents as all other sports combined and five times as many as basketball.

—Wide World Photo

Another user: George Araujo—lightweight contender.

—Wide World Photo

Oddoguard wearer: Heavyweight champion Rocky Marciano.

A survey taken at the University of Missouri covered sixty-two colleges for the 1950 season. Among approximately 4,000 players, there were 735 teeth lost, broken or chipped. At Louisiana State University, a squad of fifty-two players "sacrificed sixty-five teeth to the glory of the alma mater." At the University of Virginia, one tooth was knocked out and forty were chipped. North Carolina reported thirty-six injuries, thirty of them dental. Wayne University reported forty dental injuries. "Altogether, the playing fields of America were scattered with many incisors, molars, and bicuspids," Doctor Oddo concludes.

To Prevent 90 Per Cent of Injuries

He believes that the Oddoguard can help to eliminate, not only 90 per cent of all those injuries, but even 90 per cent of all serious head injuries sustained in boxing, football, basketball, and hockey.

Here, in part, is the basis for his seemingly optimistic belief:

"Berkely High School in California went to the expense of equipping its players with custom-built mouthpieces. In two seasons *no* teeth were damaged, *no* lips cut, *no* cheeks lacerated, and *no* cases of concussion reported. This is definite proof that dental injuries and concussion can be reduced by cushioning the shock of a blow on the jaw."

This, Oddoguard is designed to do. It thus has become a tremendous "Christmas present" to the American athlete, protecting his health and welfare whenever he uses it in competitive sports.

PART II—JANUARY TIC

Acci-Dental Appointment

(*Continued from page* 9)

hospitality at the chiropodist as if he were a rich uncle with angina.

"I persuaded Doctor Carson to have dinner with us," Harry said blithely, extending the box. "For your Christmas dinner table," he explained.

"I hope it's not an imposition—barging in like this," the chiropodist interposed.

"Oh, not at all," I countered quickly. Indecision darted around my brain like a trapped animal as I weighed the choice of over-done steak, sardines or canned soup. I lifted the lid of the box and settled immediately on breast of turkey.

"Roses!" I exclaimed. Suddenly I was no longer madly anxious to put on the new dress for a night of revelry at the country club. The only important thing was to feed these tired, hungry men and, when our guest had departed, get Harry settled in his chair with his paper.

Hugging the roses I tripped merrily toward the kitchen, and soon the three of us were enjoying delicacies that I had prepared for the next day.

"Did your patient ever show up, Harry?" I inquired conversationally from across the dining table."

"Nope," he said jovially. "She never did!" He threw his head back and laughed. I propped my elbows on the table and smiled encouragingly. "The funniest darn thing happened," he sputtered. "I finally decided not to wait any longer and as I started for the elevator I met Doctor Carson—but you tell her, Carson—it's your story."

"Well," the chiropodist said, "about five o'clock, just after my receptionist left, a little old lady came to my office and I invited her to have a seat, saying that I would see her presently. She thanked me timidly and told me that Doctor Monroe had sent her. I asked her to step into my office.

"She went in rather slowly, without speaking, and took the chair I indicated. I said, 'And now, if you'll just take off your shoes and stockings.'

"She seemed a little surprised, but took them off. I examined her feet carefully and said, 'Madam, I see nothing wrong with your feet.'

"She nodded her head and stared at me blankly. All she said was, 'That's good.'

"She just kept sitting there and I asked: 'Is there anything else I can do for you?'

"She got up then. 'Well, doctor,' she said hesitantly, 'Aren't you going to X-ray my teeth?' "

At that point Harry, Doctor Carson, and I burst into laughter simultaneously. We practically knocked ourselves out. We laughed until we cried.

A half hour later I rose from the table thinking how nice it was a dentist meets so many interesting people, and feeling grateful, oh, immeasurably grateful, to the dumb little old ladies who brighten his life.

Type and Choice of Abutment

(*Continued from page* 13)

Anterior retainers:

Dowel crowns.
Full veneer crowns.
Three-pin retainers or pinledge retainers.
Partial veneer crowns of various types.

Naturally, the length of the crown and the length of the pins or dowels used will greatly influence the retentive characteristics of all retainers. Also, the degree of occlusal or incisal convergence of the axial walls will bear a direct relation to the retention of the retainer. This convergence should not exceed four or five degrees.

Finally, Doctor Simpson suggests the following important considerations to observe in evaluating abutment teeth:

The health of the pulp and environmental tissues of the tooth.
The degree of loss of normal tooth structure from caries, abrasion, erosion or a previous restoration.
The length, size, shape and number of roots.
The position of the abutment tooth in relation to its normal position (extruded and malposed).
The length and shape of the coronal portion of the tooth.

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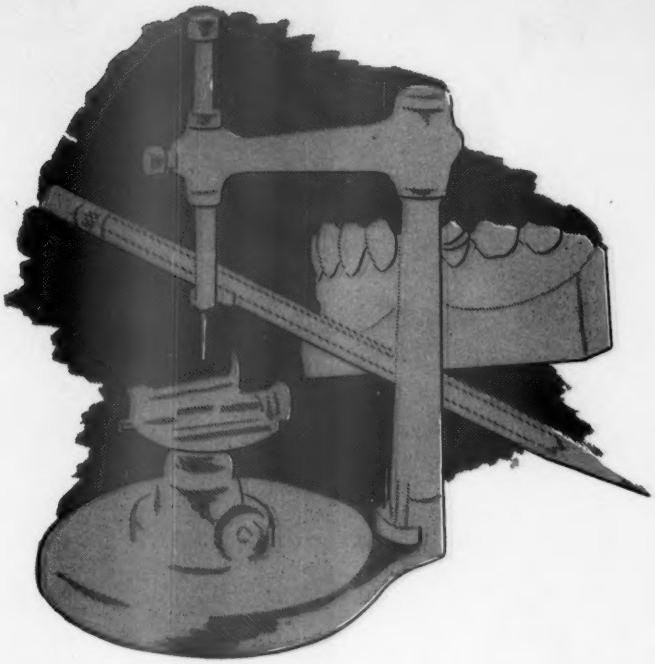
ARE YOU A DESIGNEER?



Designing a denture is a mighty nifty job of engineering. There's many a trick from start to finish.

When an engineer or architect designs a house or even a bridge he has obvious basic facts to go on. Not that it is a simple job, mind you, but compared to the job of designing a denture to fit the human mouth, it is a "pipe."

Before the engineers' society takes up weapons, let us explain what we mean.

Open wide, please

Doctor Smith faces a formidable task when he looks into a yawning mouth with "pickets" missing all over the place. Only one of the problems is the fact that when lower tooth "A" is missing, upper tooth "B" blithely continues to elongate.

He must get "B" back in line before that new denture goes in. Then too, abutment teeth have a way of drifting unless proper compensating forces are included in the denture. The good doctor just can't sink the whole thing in cement and throw up a bridge; see what we mean?

Ticonium studies design

A unique phase of this dental profession is in the great amount of time spent by manufacturers, such as Ticonium, on the subject of design. Several interesting brochures have been published by this company on the matter and a continuing study keeps Ticonium experts up-to-the-minute.

Part of the job of these experts is the obvious one of examining each "new" design that pops up; discrediting the bad ones and adopting the new.

But the case must FIT

Design is naturally all important but still in an early stage. TIC magazine itself has been throwing a spotlight on the subject—and there is talk of incorporating the articles into a complete book on the subject. Interested?

Yet, the all important fact is this: After the case is designed it must be processed so that it fits the patient. Too many patients force themselves to fit the denture.

It is the claim of Ticonium that well-designed cases, cast in Ticonium, *do* FIT!

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